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Combat Crew

strategic air command

APRIL 1990

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Combat Crew

Magazine of the Strategic Air Command—40th Year of Publication

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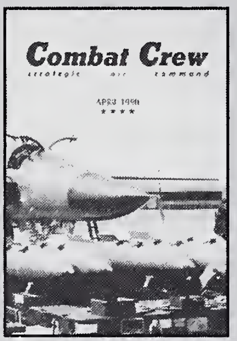

On Our Cover

The question, "Does Anybody Have the Jet?" doesn't go unanswered for long in a two-place aircraft. With increased mission demands and complications of multi-place aircraft, the question isn't as easily answered. Turn to page 11 for an interesting perspective.

SACSP 127-1 VOL. XL NO. 4 APRIL 1990

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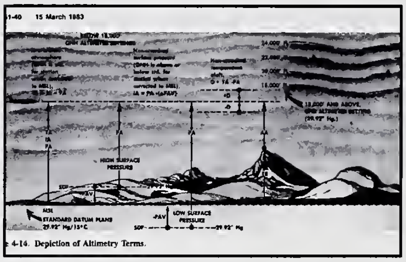

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From the Editor's Desk

Safety, like patriotism, is a commitment to an ideal. It's good to review that commitment and strengthen our resolve to improve. Whether as an instructor, a new aircraft commander, or a security policeman our success as patriots in uniform and our country's success is contingent on our level of commitment.

Can You Define Patriotism?

Lt Gen D.O. Aldridge
Vice Commander in Chief, SAC

As we continue SAC's Year of Reviewing the Fundamentals, we turn to another of the fundamental attitudes or beliefs which guide us in sevice to our nation. The fundamental belief or attitude to which I refer is Partiotism.

What is Patriotism? Have you ever tried to define it for yourself? I have always liked the way Adlai Stevenson said, "What do we mean by patriotism in the context of our times? . . . A patiotism that puts country ahead of self; a patriotism which is not short, frenzied outbursts of emotion, but the tranquil and steady dedication of a lifetime. There are words that are easy to utter, but this is a mighty assignment. For it is often easier to fight for principles than to live up to them."

I'm convinced that it should not be as H.G. Wells forecast in "The Future of America" when he said, "Patriotism has become a mere national self-assertion, a sentimentality of flag-cheering with no constructive duties."

I would like to believe that it means to everyone of us what Stevenson described as, "When an American says that he loves his country, he means not only that he loves the New England hills, the prairies glistening in the sun, the wide and rising plains, the great mountains, and the sea. He means that he loves an inner air, an inner light in which freedom lives and in which a man can draw the breath of self-respect."

But he understood that this is not a simple task nor does everyone think exactly that way. He pointed out that it is important for us to perpetuate that love of country. Because, he said, "Government (in a democracy) cannot be stronger or more tough-minded than its people."

Along the same lines, President John F. Kennedy observed, "Democracy is a difficult kind of government. It reguires the highest qualities of self-discipline, restaint, a willingness to make commitments and sacrifice for the general interest, and also it requires knowledge."

Poets, authors, politicians, songwriters, statesmen, warriors have tried to define patriotism or at least explain what patriotism meant to them. Smallett said, "True patriotism is of no party." Addington called it a ". . . sense of collective responsibility." Ingersoll believed that, "He loves his country best who strives to make it best." Along the same lines, Homer wrote, "He serves me most, who serves his country best." Inge noted that, "There is no limit to the noble aspirations which the words 'my country' may evoke." Campbell recognized that sometimes there is a price to pay for our freedom when he wrote about, "The patriot's blood's the seed of Freedom's tree." I wonder, do all of us remember what and who made this American way of life possible? President Franklin D. Roosevelt, when he designated December 15th, 1941 as Bill of Rights Day, proclaimed that day to be, ". . . set apart as a day of mobilization for freedom and for human rights, a day of remembrance of the democratic and peaceful action by which these rights were gained, a day of reassessment of their present meaning and their living worth." He reminded us, "Those who have long enjoyed such privileges as we enjoy forget in time that men have died to win them." Have you forgotten? The SAC Year of Reveiwing the Fundamentals is also intended as a time to remember our beliefs and to reassess such basics as freedom and human rights.

John F. Kennedy wrote "Why England Slept" during his senior year of college. In it he tried to analyze why England had not seen nor averted the threat raised by Nazi Germany and the events that led up to World War II. He pointed out that, "Her (England's) ideas had not been shaken by the war, her system of government was the same, England's position in the world was regarded as assured. To be bothered as little as possible and to be allowed to go his peaceful way was all that the average Englishman asked. He was not haunted by the desire for a revision of treaties; he never worried about his nation's destiny. Armaments to him were not a means of national regereration, they were an unproductive drain on a budget he was trying his hardest to balance." There may be a corollary with our nation, our people, and the current era.

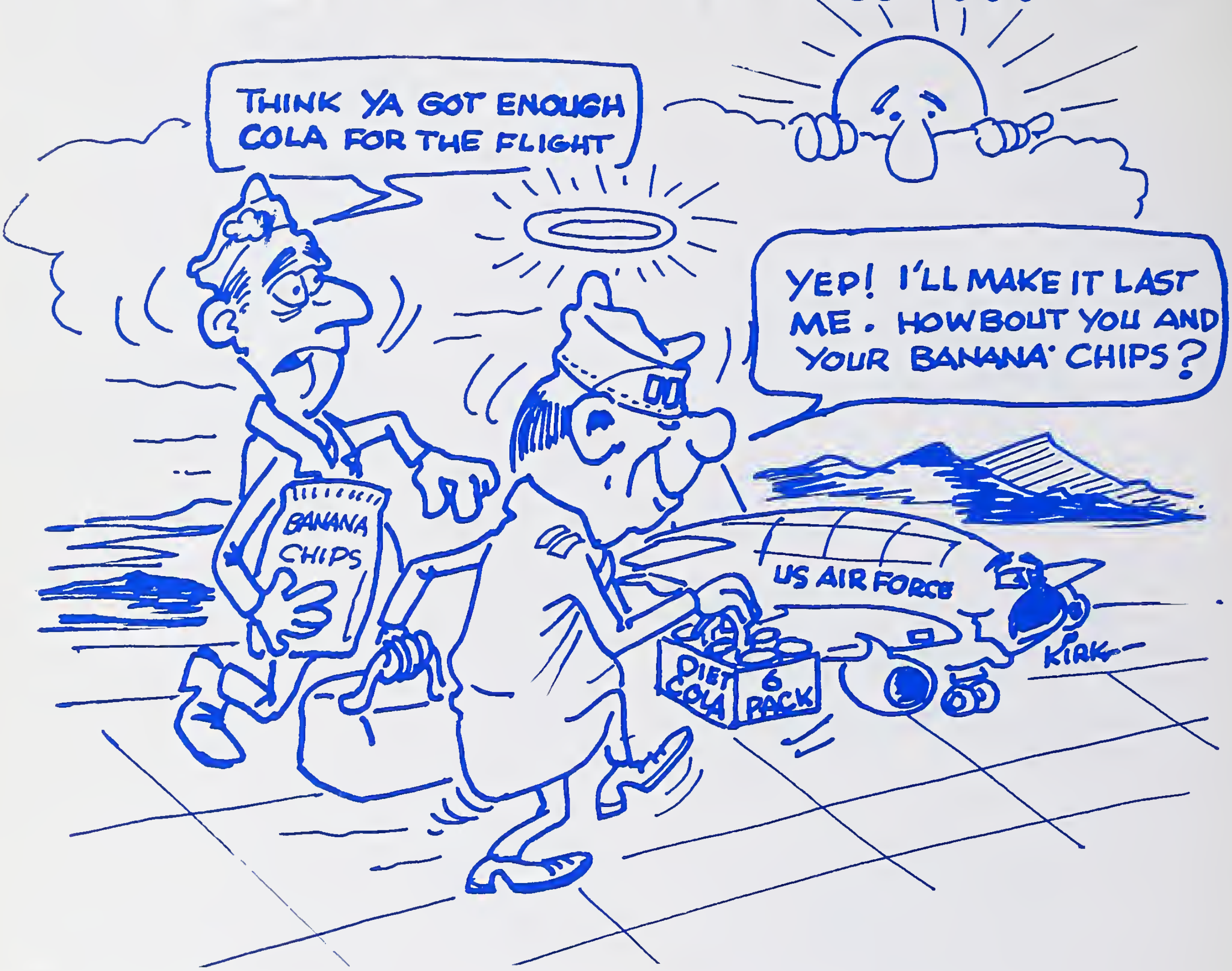
A nation loses its status when its people lose their sense of being a nation. We all must speak out in defense of freedom. We must not only define patriotism for ourselves, we must remind our families, our neighbors, our community of the price that has been paid by others so that we can live in freedom.

Our flag, "Old Glory" is the symbol of our patriotism. The symbolism of those red and white stripes and the white stars on the blue background impresses me each time I see it. To see that flag unfurl in the breeze as it is raised on a flagpole gives a thrill and reminds me of those who have made it possible for me to serve such a great nation. I gladly confess that I still get a lump in my throat when that flag marches down the street or passes in review on the parade field. That is my flag; this is my country. I hope that each of you feels that emotional tug in such an environment. Can you define patriotism for yourself? Scott certainly understood my feelings when he wrote,

"Breathes there the man, with soul so dead,
Who never to himself hath said,
This is my own, my native land?" ★ ★ ★

Al Lert – How Far...

Maj Jim Kristl
Editor


THINK YA GOT ENOUGH COLA FOR THE FLIGHT
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BANANA CHIPS
DIET COLA 6 PACK
US AIR FORCE
KIRK

One of the toughest challenges facing a young instructor occurs when flying with senior wing staff members. Chances are the staff member has much more flying experience. There's also a certain amount of reputation for the instructor at stake. I guess there's a theory that says, the better an instructor you are, the further you'll let your student go. It's all a matter of control, creating a mystique that you have something up your sleeve to save the situation when apparently no mortal pilot can.

Anyway my crew was scheduled to fly a Bomb Comp practice mission consisting of a radar scored nav leg and an hour's worth of orbit exercises, plus some pattern work. The ADO/Bomb Comp project officer was going along to check his troops out and fine tune some new techniques we had been discussing. Additionally he wanted to get some pattern work started so he could get checked out in the -135. It was a busy mission since we had a lot of activity planned. The climbout was fine. We had some good slick crew coordination going and we enjoyed showcasing our ability for the ADO. It was going to be a good mission. As we leveled off, I initiated the refueling checklist and opened the first of my six diet colas. The ADO thought this was hilarious. "You sure you got enough cola for the flight, Al?"

"Yes sir, it's a short mission but I'll pace myself and make them last."

Who was he to talk about unusual inflight snacks, I thought, as the ADO munched his dehydrated banana chips? My reverie was interrupted as the pilot soon got everything cleared with Center. With 10 minutes out of the orbit, we initiated a double seat swap and put the ADO in the left seat. I started to instruct.

"It's easy," I explained, "a whole lot easier than flying as a receiver. We just monitor the situation in terms of airspeed and systems. If we do get a breakaway call, maintain firm control of the yoke as you advance the throttles, and wait for the boom's call to climb. Then disengage the autopilot, and gradually start a climb. Don't worry, I'll be backing you up."

I was a little concerned that in the

heat of the moment he would revert to his B-52 habits: chop the throttles and drop. I reassured myself that a good instructor can anticipate situations like that.

The rendezvous was slick. When you roll out less than one mile in front of your receiver you know people are impressed. Things were looking mighty good as I cleared the receiver up and turned control of the refueling over to the boom operator.

"Okay 33, you're cleared in."

"33 copies."

"Contact, looks good."

"Contact 33."

"Okay sir, disconnect."

"Disconnect 33."

"Okay IP, he wants his fuel this hook up."

"Roger, boom."

"He'll also be on for a while to log some toggle time."

"Copy."

"You're cleared in, 33."

"33 copies."

"Contact."

"33 contact."

"He's taking fuel."

"Roger."

"He's got his five thousand."

"You've got your fuel 33."

"Roger, we're gonna hang on."

I turned to the ADO, "See, isn't this easy?"

The ADO nodded. He didn't have a death grip on the yoke and throttles, but he wasn't just going through the motions either. He was intently monitoring every system.

I had just finished checking in with Center when I felt and heard something. It was a sound I hadn't heard for over 10 years, not since I was getting checked out in the -135. My first reaction was that I had been imagining things. There were certainly no indications on the engine instruments. No one else had felt anything. Still.

I eased on the yoke. "Hey boom, let's get a disconnect. Right now."

No questions from the boom, just a short transmission, "We need to disconnect, 33, now."

"33 disconnect, dropping back to observation."

Now everybody was looking at me with questioning glances. The boom asked, "What's up IP?"

I took control of the aircraft and got ready to explain what I had felt. As if on cue, I felt the kick and heard the same noise. This time there was no mistake and it didn't stop after one kick. The engine started kicking and roaring.

Now everybody knew what was up. I was busy looking at the engine instruments to determine which engine on the right was causing the commotion. There it was, the number three EGT and RPM started to dance erratically. That's all I needed. "Engine Failure in Flight Checklist," I called over interphone. "Boom, have the receiver drop back a bit more and tell him we're shutting down number three."

"Roger."

"Jump, back me up on the checklist."

"Copy."

"IP, the receiver's dropped back 200 feet, well clear."

"Thanks boom."

I pulled the number three throttle back to idle, the grumbling and kicking were still pretty bad. Before they got worse, I place the throttle in cutoff.

The receiver reported some unusual exhaust just prior to shut down. We explained the situation on interplane. We also agreed that canceling air refueling was the next order of business. The receiver requested clearance down track as he descended to the bottom of the block. As we climbed to the top of the block, we developed our own plan for recovery.

I sure hated missing all that activity we had planned for today. It wasn't going to be easy to make it up.

"Nav, let's go another five minutes this way, then we'll turn to intercept our route home."

"Copy IP."

I gave the jet back to the ADO and opened another diet cola. We checked the systems over and everything seemed to be fine. Now that we had a moment to pause, the ADO blurted out what was on everyone's mind.

"How the heck did you know that engine was bad? There were no indications in here."

"I know," I replied with a shrug, "I just felt it. After that first kick, I recognized it."

Felt it. No matter how I tried to explain, it only made it look like I had used a massive dose of IP magic to anticipate and handle the emergency. The pilot in the jump seat was in awe. The boom too. If they thought I was a decent IP before, they now believed I was approaching mythical status.

I had to admit it was a combination of luck and skill to recognize and react so calmly. Even I started to get a bit overly impressed with my own abilities. Maybe I was approaching mythical status.

As we headed back, we discussed the landing considerations.

"Do you want me out of the seat, Al?" The ADO asked.

"Naw, it's just an inboard engine. No sweat."

I was still a little disappointed about losing all the pattern work. Everything else had been going so well I just hated to pass up a chance to shine in the pattern. Oh well, as an IP approaching "Mythical" status, I would salvage some of the training by giving the ADO the landing.

We contacted command post about 150 miles out and let them know what had happened and what we planned to do.

Once again we reviewed landing procedures as well as the go-around procedures. I went over everything for the ADO since he would be making the landing.

1990
SAC'S YEAR OF
REVIEWING
FUNDAMENTALS

Al Lert – How Far...

"We'll shoot an ILS to a full-stop. Piece of cake, just keep the command bars lined up."

We started our descent and I got a chance to play IP as we talked about descent rates, how much altitude to lose and other little techniques. Things were going great. I knew I was on a roll.

The command post called to double check the information and let us know that crash response vehicles would be standing by. I told them we had it under control and would probably be on the ground in 10-15 minutes. About 18 miles out we intercepted the localizer and were cleared for the approach.

The flight director was all set up and the ADO was busy following its commands. He was flying a nice aircraft. Good inputs. Good control. The jump seat and I took care of switches and checklists. At about 10 miles out we switched to tower.

"Glideslope marker is off the top of the case. All configured for landing. Everything's peachy."

There was an IP from training flight in the tower. He had been monitoring our progress and radio calls since we had checked in with approach. He asked the one question that no one had mentioned.

"Lippy 22, hey Al, what seat you in?"

"The right one, tower."

"Copy."

That simple question made me review what we were planning to do. Sometimes simple questions can plant a seed of doubt and it sure did this time. We were about 4-5 miles out, on course, on glide slope, properly configured. What's wrong with that? I knew everything was going my way, so I wasn't too worried, but the question hung back in my mind.

"Stay on glideslope, you're getting a bit high," I mentioned to the ADO. He made a correction but we were still slightly high as we got closer to the runway. What could be wrong?

"Say winds tower."

"Four to five knots from the left."

"Thanks." What was I missing?

"One mile, slightly high on the glide slope, looking good," said the jump seat pilot.

"Thanks jump." Then it hit me. we're slightly high on short final with a former B-52 driver unqualified in the aircraft about to make his first landing in a tanker, a three engine one.

In the few seconds it took for "unqualified pilot" and "B-52" driver to hit home to my not so mythical senses, I took control of the aircraft for the landing.

The ADO seemed relieved. The first thing I did was reacquire the glide slope and adjust the aim point. I kept flying the aircraft down to the runway, flared and let it roll on down to the end.

"Nice landing."

"Thanks." As we rolled out and cleared the runway, the realization finally hit me. An unqualified pilot, three engine landing, what was I thinking about?

We taxied in and shut down. The IP from the tower had driven over to talk to us. The ADO thanked me and said we'd do it again and left. We unloaded our gear and went to look at the engine. The maintenance folks were peering inside. We had thrown a main rotor and the inside of the engine case was covered with fine bits of metal shavings. The nav was flabbergasted. Pilot and boom shook their heads.

As they began to load our gear on the crew bus, the training flight IP took me aside and asked who was flying the plane?

I grinned sheepishly and said I took over on short final. He said he could tell, the aircraft was a bit high then suddenly dropped and got right on glide slope and came down smooth and steady.

"What's wrong, your pilot not quite ready to upgrade and handle the pressure landings?"

I quietly said, "No, he just wasn't qualified in the aircraft yet."

"You had the ADO in the seat! Are you nuts? He's not qualified in either seat. Whatever happened to putting your most experienced personnel in the seats for an emergency?"

"I know, I know... now. I guess I got a little overimpressed at being a legend in my own mind."

"It happens. The lucky ones recognize their limitations and stay within them. Some IPs never do. With one engine out you were just a step away from a sporty two engine approach. You were lucky today that something didn't happen that required you to use some of that IP magic."

"Yeah, I did feel lucky today, but I've never felt this stupid. Hey, I've still got two diet colas left in my bag, let's grab 'em and head back to the squadron."

Heads Up Flying Club

Crew R-172, consisting of Captain Pete Lindner, AC; Lt Todd Hoppe, P; Capt Anthony Bevis, N; A1C Matt Paris, BO; and SMSgt Tom Betrus, IBO, 380 BMW, are the latest inductees into *Combat Crew's* Heads Up Flying Club.

Their KC-135 launched on a routine airlift mission from Eielson AFB with 15,000 pounds of cargo and 36 passengers. One hour after takeoff, Lt Hoppe discovered that the right hydraulic system had emptied with no warning light indications. Capt Lindner immediately depressurized the right system and elected to continue the flight to Plattsburgh. Loss of right system hydraulics meant a loss of powered rudder, hydraulic flap system, leading edge flaps, nosewheel steering, and right seat brakes. This loss of drag and control devices made it necessary to burn down fuel to 18,000 pounds so that the aircraft could be stopped in the 11,760 feet of runway available at Plattsburgh. Arriving at Plattsburgh with 48,000 pounds of fuel, the crew began adjusting the fuel load only to find that fuel pressure in the air refueling system had fully extended the boom. Repeated attempts by the IBO, SMSgt Betrus, to retract the boom proved unsuccessful. Capt Lindner knew the landing would have to be smooth to prevent the extended boom from separating from the aircraft and spilling fuel on the runway. As the fuel on board reached 30,000 pounds, a fire erupted in the forward section of the number four engine, causing the number four engine fire light to illuminate. Capt Lindner shut down the offending engine and accelerated the aircraft to increase airflow through the engine. Ten minutes later, the fire in the number four engine subsided and the fire light extinguished. The asymmetric thrust problems created by the inoperative outboard engine were greatly magnified by the loss of the hydraulically powered rudder system. Capt Bevis kept the aircraft in a safe orbit around the air base until the fuel load reached 18,000 pounds. At that time, A1C Paris manually extended the flaps to 30 degrees and prepared the passengers for an emergency landing. Capt Lindner flew a flawless, 30 degree flap, three-engine approach and landing with hydraulic rudder inoperative and the boom fully extended. Clear thinking, exceptional crew coordination and outstanding airmanship skills helped Crew R-172 effectively handle three separate, yet compounding, emergency situations and safely recover an irreplaceable asset. **Well Done!**

380 BMW Crew R-172: (L-R) Capt Pete Lindner, AC; Lt Todd Hoppe, P; Capt Anthony Bevis, N; A1C Matt Paris, BO; SMSgt Tom Betrus, IBO.

Windshear

Maj Rich Thomas
SIFC, Castle AFB

"As we (P-3) entered the cell, we experienced moderate turbulence, about a 10-knot increase in air speed, and a 2000 fpm rate of descent. Passing out the other side, we lost about 15 to 20 knots, and felt the same turbulence and rate of descent." **(Approach Magazine, March 1989)**

On the second approach, the T-38 encountered turbulence and low visibility conditions due to blowing dust. The instructor pilot assumed control of the aircraft and landed 6045 feet short of runway threshold in a plowed farm field. **(USAF mishap)**

"I was the IP in the right seat. After about an hour in the pattern, on one approach, the pilot said: 'Help me. I'm not in control here.' We pushed the power up and pulled back on the yoke, but kept going down. I felt we had to descend to get some speed. We couldn't get best flare plus ten and climb. We finally started to climb, as the radar altimeter went off, at about best flare speed." **(Story to author from SIFC graduate)**

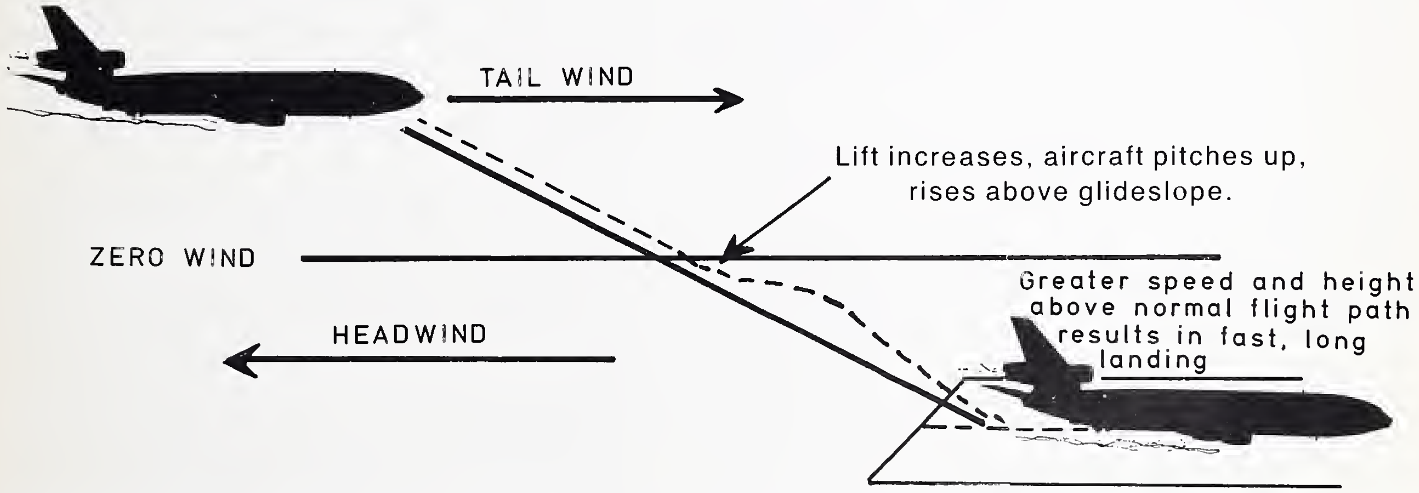
"In full power, completely cleaned up, with plenty of airspeed at near midfield and 500' AGL, our aircraft sank toward the runway as if some giant hand was pushing down on it. Instinctively, I rechecked the throttles in mil (no afterburners in the T-37)." **(Approach Magazine, March 1989)**

"At pattern altitude we had a 60 knot headwind, but the tower was calling only 20. I tried to remember how to apply reference groundspeed, but got jumbled up. I decided to add 15 knots to our approach speed, the OSO kept us updated on the winds, and we planned a low approach." **(Story to author from SIFC graduate)** These incidents verify what you should already know. Windshear is a serious hazard and in some cases it's a killer. Having a good handle on how to fight it may save your life. Most of our tech orders have some good words about being aware of wind effects during approaches and using reference groundspeed when approach altitude winds and surface winds don't compare favorably. However, B-52 pilots should realize the Dash-11 doesn't address the subject in much depth. Read the KC-135 or KC-10 tech order for some good general guidance on windshear. (None of our tech orders say much about convective windshear characteristics or procedures.)

While crew knowledge of windshear is vital, good crew coordination may prevent an aircraft accident. It's really important to keep the navigators or other crew members deeply involved in approach planning in all airplanes, but particularly in the B-52. B-52 pilots don't have the conveniences available in modern airplanes –like a wind readout, angle of attack indicator or ground speed information that are important in recognizing and coping with windshear. This month we want to review two aspects of coping with windshear on the approach: How to apply reference groundspeed and how to escape from a windshear encounter.

Let's review the basics of reference groundspeed, which is appropriate to use when penetrating many shear hazards such as frontal systems or low altitude jetstream-type shears. You will only fly the reference groundspeed when you anticipate a performance decreasing shear (meaning the headwind will decrease or tailwind will increase) as you descend on the glidepath. The KC-135 Dash-1 recommends flying reference groundspeed when a speed loss of 15 knots or more is indicated. If you were to add it to your speed in an increasing performance case (meaning the headwind will increase or tailwind will decrease), you'd only be complicating the problem of getting your jet on the ground. A major international airline did that a few years ago and ended up in the drink off the far end of the runway. Reference groundspeed is not a weapon to use to battle convective activity, like a microburst. Your only weapon in that situation is to go around when you see deviations from your anticipated approach profile.

Compute your reference groundspeed on every approach so you are familiar with the concept. Subtract the surface headwind (or add the tailwind) to your approach speed. That's your reference groundspeed. Fly whatever indicated airspeed you need to maintain your current groundspeed at the reference groundspeed, but in no case fly slower than the speed you originally computed for the approach (based on your gross weight). If the winds change slowly, what you'll actually end up doing is slowing down as you descend until you're at your computed approach speed. If the wind change is all within a small altitude band, you'll have a calculated airspeed pad to compensate for the airspeed loss.


TAIL WIND
Lift increases, aircraft pitches up, rises above glideslope.
ZERO WIND
HEADWIND
Greater speed and height above normal flight path results in fast, long landing

A. Performance increasing shear resulting in a long landing

A quick example:

Approach speed = 150 kts
Surface wind = 10 kt headwind
Wind at FAF = 30 kt headwind

This gives you a reference groundspeed of 140 kts (150-10), but your groundspeed at the FAF is only 120 (150-30). You'll lose those 20 knots of performance when the wind dies. With less wind over the wings and fewer molecules being jammed down the pitot tube your airspeed is going to drop 20 knots. The solution is to add 20 knots to your approach speed (making it 170 kts now) to keep your reference groundspeed at 140 kts. As you see the winds change (Navs, pay attention), adjust your speed. There seems to be a consensus in the windshear literature that if you have to add more than 20 knots to your approach speed you ought not to fly that approach.

Let's look at another case:

Approach speed = 150 kts
Surface wind = 5 kt headwind
Winds at FAF = 20 kt tailwind

Now your reference groundspeed is 145 kts and your current groundspeed is 170 kts. Wanna slow down? Not now, thanks. Just fly your planned approach, but be ready for some surprises. In this case, you should see your performance increase when you pass through the shear level. When that headwind hits your nose, your airspeed will jump up and the glidepath will head for the bottom of the case.

We tend to say, "That's fine. I'll take increased performance any day." The trouble comes in when you correct to glidepath with a power reduction and lowered pitch attitude. You wouldn't be the first pilot to slam into the overrun because the power was too far back when you tried to recapture the glidepath.

Because of this danger, MAC teaches the performance increasing case as the more dangerous type of frontal shear. That quick, instinctive correction you make to save the approach may be misguided.

So what should I do if I encounter windshear? How about some guidelines? The most important thing to know is when to go around. Guidelines recently drawn up by an FAA/industry consortium recommend that you take it around as soon as you exceed any one of the following parameters:

+/- 15 knots indicated airspeed
+/- 500 fpm from target vertical speed
+/- 5 degrees of pitch from planned
+/- 1 dot glideslope displacement
An unusual throttle position for an extended time

If you stick with these guidelines you've really helped yourself to live to fight another day. They are good indications that worse changes are yet to come.

The consortium also came up with a standard windshear escape maneuver. It is applicable in all windshear encounters, but particularly for convective shears. Remember this is a "save your butt" maneuver, designed to help you overcome your lack of judgment in getting caught in the windshear situation in the first place. It was designed for modern transport category aircraft. Since some SAC aircraft may be unable to achieve the consortium's recommended pitch target, we have modified the escape maneuver at SIFC. This maneuver has four steps.

(1) **Thrust.** Aggressively apply Maximum Rated Thrust. Go to the firewall if it's needed to keep you off the ground.

(2) **Rotate to a Climb Attitude.** The consortium study called for a smooth rotation to an initial target pitch attitude of 15 degrees nose high. We tried this in the KC-135A model sim at 140,000 pounds, but the highest pitch we could get was about 12 degrees without stalling. The point is that the pitch attitude is going to be far higher than what you're used to. What pitch attitude should you achieve? We really can't prescribe a given pitch attitude for all aircraft. Some aircraft can use the stick shaker as a guide. Those of us who don't have one of those contraptions have to rely on a different performance instrument. That's airspeed. The profiles we flew in the KC-135A sim indicate that the minimum usable flying airspeed (initial buffet) is a good "no lower" speed. In the B-52 you can use minimum recommended airspeed. Those speeds will give you about 10 knots above the staff speed with flaps down.

(3) **Control Flight Path With Pitch.** Rapidly changing winds may cause rapid roll and pitch excursions. Make inputs smooth and steady (approximately 2 degree increments). Do not follow the pitch commands on speed referenced flight directors (like the FD-109). Be careful using angle of attack (AOA) information. It can change rapidly in a windshear encounter. Although it is something you want to cross-check and respect, the AOA is not a control instrument. Be sure you're flying your airplane off the attitude indicator. If you've encountered convective windshear, like a microburst, don't relax too soon. About the time you exit the up and down drafts, you'll hit the tailwind that can rob your airspeed. But you must be ready to relax your back pressure and fly the airplane out once the shear has been passed to avoid a stall.

Maintain Configuration. Leave the flaps and gear where they are. There may be benefits in changing flap settings, but they are outweighed by the short term loss of lift as pitch attitude is adjusted for the new setting and the possibility of getting the wrong setting in the high stress environment of a severe shear encounter. Also, although your thrust required may decrease, there is an increase in the buffet speed and you're probably operating near that speed. The same thing applies to raising the gear. In most airplanes gear doors open first. That's drag when you need it least. Also, if you do hit the ground, the gear will cushion the landing. Don't mess with the stab trim other than to correct for your power increase. The winds can change so abruptly in a shear encounter that you may well be further out of trim in a few seconds. Be ready to accept unusually high stick forces.

It's not possible to say this escape maneuver is the "be all and end all" of windshear recovery. But it's the considered opinion of a lot of sharp, experienced people. Think about it; there are some different ideas in that escape maneuver. We are customarily trained that airspeed is our life (and trim is our friend), but that idea needs some modification when escaping windshear. Anticipate the need for an unusually high pitch attitude, low airspeed, and unusual stick forces.

Every time you go out to fly, think about windshear and how you'll deal with it. Get the whole crew involved. The first line of defense is to **avoid windshear.** You need to remember the deviation criteria to aid in recognition. Take it around when you exceed any one of those parameters and live to fight another day. Don't wait until you need the escape maneuver. If you evade you won't have to escape.

Windshear can be no less of an enemy on takeoff, but that's for another month. If we've generated some questions about windshear, or you have some good war stories, give us a call at 347-4571. **Keep it between the lights!**

Does Anybody Have the Jet?

Maj Dave Loewer
Naval War College

I've got a question for all of you avid readers out there. Has anybody noticed that our airplane driving habits are slipping on to some pretty shaky ground? Over the past few years, it seems that all of the bar talk (I know some of you still go to bars) has centered around the decline in our ability to do our job. It doesn't matter if you're in a SAC, MAC, or TAC bar, it all boils down to the same thing. We seem to have adopted the attitude of crying in our beer about every imaginable subject, from the lack of leadership to the lack of flying time to square filling etc., etc., etc. All of the griping may be justified and then again it may not; I could probably come up with a few thousand words on the above topics myself. But I'm not here to talk about griping, the interest item here is on flying.

It seems as though we've lost our interest in flying, and turned more toward "griping," what "masters" to get or how to game the newest promotion system. Not long ago you couldn't walk into a stag bar (you remember those, don't you?) and not get clotheslined by a five fingered MIG-21 closely followed by a poke in the eye by a 20mm cannon cleverly disguised as an index finger. The attitude then was all about flying; how to, when to, why to, and how to do it better. The talk in the squadron even included the lone "oldtimer" who tossed in an old U-Tapao/Arc Light war story. The question I have to ask myself now is, what happened to that attitude, that style? Have we really lost it?

No, we haven't lost it; we just don't allow the average crewmember to do the things they are being paid for. Except for some word changes and the addition of another gender, most of the above was written ten years ago by Maj Sholders for *Aerospace Safety*. More on Maj Sholders later; right now, back to the present. When I talk to the average crewmember either in class or on the road, almost all the responses point to one important thing. Too many folks have given up on themselves and the Air Force. The feeling is that the bureaucracy is just too big and complex for the individual to have an impact on how things are being run. Many of the young crewmembers don't seem to understand where they fit into the overall USAF way of life.

Even with the "bonus" we have a lot of people punching out for jobs with industry, not just the airlines. The bonus, other incentives and the like, aren't getting through to the young flyers who haven't recognized the inherent challenges and satisfaction of flying.

Fighters are nice but bombers make policy.

Whether you're flying BUFFs, B-1s, or FB-111s, it is just plain fun getting that airplane up and really making it do its stuff. Make the airplane fly the way it was meant to be flown. Don't overstress it, but know your vehicle and what it and your crew can do, and you can have fun. I've taught flying and flown for more than 14 years now, both military and civilian, and its obvious that young flyers are motivated, smart, and untainted by the cynics. At some point, those of us who have been around the flag a few times have failed to instill a sense of pride and self-worth in these young flyers. Tactics is the buzz word of the day and with it we can make a difference in the attitude of the young drivers, bombers, jammers, and gunners we are training today. As long as we avoid the tendency to rush out and create a new raft of regulations and directives, and just allow good common sense flying to rule the day, we will have a better combat flyer.

Oddly, it appears that this idea is not a new one. There has always been an opportunity for the aggressive flyer to reach out and grab hold of the stick. The basic theme for this article came from an article by Maj Sholders in the March 1980 issue of *Aerospace Safety* (now *Flying Safety*). Maj Sholders brought out a number of valid points by the stories he related in that article and I think it's long overdue for some of those to be told again. The spooky part is the fact that what he said a decade ago is still very true today. The following stories are both SAC and

(con'd. from page 11)

Does Anybody Have the Jet?

TAC stories but the lessons learned are pertinent regardless of the aircraft being flown.

The first story is about Maj Sholders himself and the second about a SAC bomber IP. Both tell a tale about how we can start our young flyers on the right road.

Story No. 1. **The Supervisor Who Knew How to Supervise.** Once, when I was one of the greenest of green buck IPs in the F-4, I was called to the DO's office for my prelaunch lecture into my IP career. The DO said something like this: "Around here we fly according to the book, etc." Standard lecture, I thought. He's gonna chew me out before I even go to work. The lecture, however, took an interesting turn a few minutes later when it went something like this: "I realize that every situation is not covered by the book. You are one of my IPs, I trust you, and you are getting paid for your superior judgment. Exercise it as you see fit; I will back you to the hilt." I walked out of that guy's office feeling about 12 feet tall; I would have committed hari-kari before I crossed that man. Although we rarely spoke after that day, I've always considered him to be the best DO I've ever worked for. He now has more stars than I have feet.

Story No. 2. **Real Time Instruction.** A B-52 IP once came up with the idea that things happened in the aircraft at a much faster pace than in the simulator. Novel concept, eh? Anyway, this IP commenced a malfunction trainer session in the usual way with all equipment just humming along as it usually does in the Buff (that is, most of it working). The difference came when the programmed malfunctions began to occur. It seems that this young pilot team had been receiving quite normal training up to this point. Whenever a malfunction would occur the trainer was placed on "freeze" and the pilot would pull out the Dash-11 and begin reading the emergency procedures to the AC. Well on this particular trainer, the IP decided that maybe the pilot team should find out what happens in real time. Needless to say the pilot team continued swinging blindly at malfunctions and losing more and more control of the aircraft until they eventually augured in a simulated crash in a simulated Buff. The spit and polish academic planners were less than pleased with this type of instruction because it didn't show effective use of the trainer and didn't fit the task elements for the block. The up side is, that after a couple of those more realistic trainers, the pilot team got their act seriously together. When they encountered that first airborne emergency they responded with the appropriate mixture of checklist and flying skill. They flew the airplane first and worried about checklists later.

The last story addresses how you and I have choices, about how we will conduct ourselves during our Air Force careers. The story, originally told by Maj Sholders, goes back to a time when we did fly together from the same field on a regular basis, all of us together. Since it includes everybody, it is especially pertinent in today's environment when we are once again trying to organize the "Gorilla."

Story No. #3. **The Horse Built by an Air Force Committee.** There was a multi-mission, multi-aircraft type of base which formed a committee to develop operating procedures for the airfield. Everyone was there – fighter types, SAC types, FAC types, air traffic controllers, and members of the foreign host government. After hours of intense deliberation, procedures were invented which considered every possible occurrence from nuclear attack to an invasion of crickets. Every procedure was locked in concrete – everyone knew exactly what to do for every conceivable situation.

About two months after the procedures were initiated, the wing had one of those massive safety meetings. The first item on the agenda was a giant diatribe from some high mucky muck in the wing about how the guys weren't following all the procedures and just screwing up the whole operation. Finally, one lone captain with a beak on his face stood up and said: "Sir, this whole thing that you've got going here is fine and good I suppose, but my mission at this base is not to follow your operating procedures. My mission here is to drop bombs and to learn air-to-air warfare. I don't understand about half of your procedures; I can't remember any of them, and even if I could, they would cost me so much time and gas that they would unacceptably cut into my mission. How about giving me some credit for a little bit of common sense and let me do my job? Right now your procedures are simply not hacking the program."

Amid stunned silence, the courageous and articulate captain took his seat. All of the procedures were subsequently scrapped and the base lived happily ever after, with the "committee built horse that was a nasty old camel" never coming around again.

The SAC Tactics School is emphasizing the most immediate and effective change we can make in this command to enhance our combat capability in the same areas that Maj Sholders talks about. Sure, it would be easy to "cop out" and become apathetic as the adversary threat gets bigger and more advanced and our aircraft grow older.

But by taking the aggressive, "I've got control of my jet" approach, you may find there is a lot of information available about the threat, and more important, how you can exploit his weaknesses to enhance your survivability.

If you need better information to do your job right, you won't get it until you, as the operator, the crewmember, tell someone what you need, and why. Remember, it's you and your crew that are going to fly the airplane and get the job done, not the guys who write the tech orders or the OPlans. We are challenging everyone to get involved in making this command more combat capable to accomplish its assigned missions. No matter what aircraft you fly, it's up to you to adopt the attitude required to stick your neck out, take control, and **improve the odds.** ➺

How To Write an Article for *Combat Crew* Magazine

I was an Air Force ROTC Liberal Arts major at a great golden-domed university. I've read many military articles and several on aviation safety, especially in Combat Crew.

Some of the articles start out: "Here are 24 simple rules I've discovered as a Second Lieutenant to conserve fuel on each mission ...", or even better, "Remember as you proceed low level there are 12 salient points of leadership you should consider." Others started out, "I never thought I would be on an airplane that lost a complete hydraulic system and three engines!"

No matter how many times I looked at these articles I found that I liked the third type best. Why? I guess because I had a chance to experience an inflight emergency without leaving the ground. And in retelling the story I could make it sound like it happened to a personal friend of mine. Lately, however, I've noticed there aren't quite as many "war stories" in the magazine, so I've drawn upon my 275 hours of flying experience to provide a guide to writing articles for the Combat Crew.

It was

1. a dark and stormy night
2. a severe clear day
3. an O-dark thirty showtime
4. our first day off alert
5. our 68th day on TDY

I was

1. a new AC/P/RN/N/EW/DSO/OSO/BO/AG
2. a staff IP/IN/IBO
3. an old-head basic qual puke
4. a stan-eval pilot/nav/boom
5. an ACE pilot

The mission was a

1. local pattern ride
2. Bomb Comp practice #7
3. off station training flight
4. fly-by for the NAF/CC's daughter
5. overwater fighter drag

Me and my

1. boom operator
2. A/C
3. pilot not flying
4. box of lobsters
5. Gucci jet
6. swing wing jet

Were

1. ASR RMI only circle to land
2. on an Auto ILS with the DO in the seat
3. out of TACAN range with the INS dumped
4. sucking fumes and warm box lunch milk
5. number 5 on a 6 ship MITO in the smoke
6. IP inbound on the ORI

The first thing that went wrong was

1. the bus was late
2. the coffee pot was inop
3. we noticed our box lunches had expired
4. the DO called
5. the INS gave a warning code no one had ever seen
6. the command post said, "Standby."
7. the pilot said, "uh oh.."
8. the N/EWO/DSO/OSO/BO/AG said, "Hey AC, we got a prob."

First, we

1. executed boldface procedures for Radar Vectors direct
2. looked at each other
3. said, "Oh my!"
4. selected autopilot #2
5. called the boom for another cup of coffee
6. transferred aircraft control
7. selected augmenters

Then, we

1. called for the checklist
2. discontinued A/R
3. selected manual ILS
4. selected 1 & 3 reverse thrust
5. donned our LPUs

If it wasn't for my

1. simulator training
2. leather flight jacket
3. RSO training
4. faith in the DO's judgment
5. St Jude medal
6. desire to return to the fundamentals

I wouldn't be here to write this story.

Signed: Big Jake, Lefty, Bubba, Mongo, Bull, Piano Man, Gucci Man, Babs

I have flown the: B-52 D/F, KC-135, KC-10, B-1, B-2, T-38, T-37, U-2, TR-1, SR-71, C-12

I am currently: wing scheduler, remote, on alert, in requal, the RSO, "Alert Mother," airborne on a fighter drag.

Life After Upgrade – The Brand New AC

Maj Mike Clover
19 AREFW, Robins AFB

You've come a long way since your UPT days. Your flying skills have greatly improved with experience and you feel ready to make that jump from the right seat to the left. The upgrade program at CCTS was comprehensive and demanding, but now you're checked out as a combat ready aircrew commander. You've overcome many obstacles along the way and you deserve a break. It's time to sit back, relax and settle in as Crew R- XXX's new AC – Wrong!

Your "hard" work has only just begun. As an aircraft commander, you've now assumed a far greater number of responsibilities that require greater time and careful planning. Gone are the days of only thinking about yourself. You've got a crew to think about. Have you considered their qualifications? Sure their checkouts were just as thorough as yours, but now you are their crew commander. Are they still current and qualified? You went on leave, TDY or deployment. Who is in a better position to know if your crew is still mission ready? Have all those ground training requirements, events, flights, simulators been completed?

You may get a false sense of security by thinking somebody else will be watching out for your crew's needs. Are you depending on the people at scheduling or the operations officer to keep you out of trouble? If you are, don't! This is your responsibility now. If you feel you need a sortie with supervision, ask for it –that's smart flying and good crew management. If you know you or one of your crewmembers has gone noncurrent, don't try to hide the fact – the problem won't go away. Do whatever it takes to correct it. Remember, **You are the boss.**

How about the crewmember who confides in you about a personal problem? What are you going to do with that information? Flying is serious business and you want your crew concentrating on the task at hand. Without having to violate a confidence, you might consider talking to the squadron commander, chaplain, or anyone else who can help. Take care of that personal problem before it affects the performance of the entire crew.

Don't overlook the books. Your troops should routinely review systems, procedures and regulations. Sure you knew all these things before, but sit down with your crew and discuss specific situations. On the ground, you have all the time in the world to "what if" a scenario – in the air, it's completely different. Your crew's safety may depend upon it.

> ***"Gone are the days of only thinking of yourself. You've got a crew to think about."***

Make a practice of periodically reviewing emergency procedures. You knew all of your procedures cold when you were a pilot; now as an aircraft commander, things are a little different. There are a lot more distractions. Did that last no-notice emergency procedures exam catch your boom operator, navigator, radar or defensive systems operator by surprise? Tell your crew to get friendly with the Dash One. These people share in the responsibility of ensuring that they're always ready, willing and able. But you are the boss now and ultimately accountable. Don't leave any doubt in your mind that they can do their job in an emergency. Use your management skills to get results. Consider organizing extra EP sessions while on alert, in the simulator or during mission planning. Ask those seasoned aviators and warriors to spread their knowledge around to the younger folks during your hangar flying sessions.

Keep in mind this is not a one way street. That crew of yours is looking for leadership. You're no superman, but an ordinary human being. If you fail a no-notice check flight or an EP exam, then you have to make an extra effort to regain your credibility. Crack down harder on those procedures and exams – get right back in the driver's seat. Show your folks not to fear failure, but to learn from it. Lead by example.

One last point – listen to your people. Remember your upgrade program? The instructors always had something to say after each flight and you listened to their advice. Well, you are now an aircraft commander and the learning never stops. Listen to the people who are there to help you. The wings, squadrons and detachments are full of people who have the experience and know how to help you do your job better. Your fellow aircrew commanders also have a lot to say about how you can improve. Take what you've heard and apply those suggestions where needed. Keep your chin up and roll with the punches. The sun will rise again. Earning the "keys" to the jet wasn't an overnight process – Learning to be a good aircrew commander isn't either. Your first day as a new AC was tough, but maybe tomorrow will be easier.

ZOOM
WHATS WITH CAPT DINKLEDORK?
HE JUST GOT UPGRADED TO AIRCRAFT COMMANDER!
HANGER 13
KIRK

AFM 51-40   15 March 1983

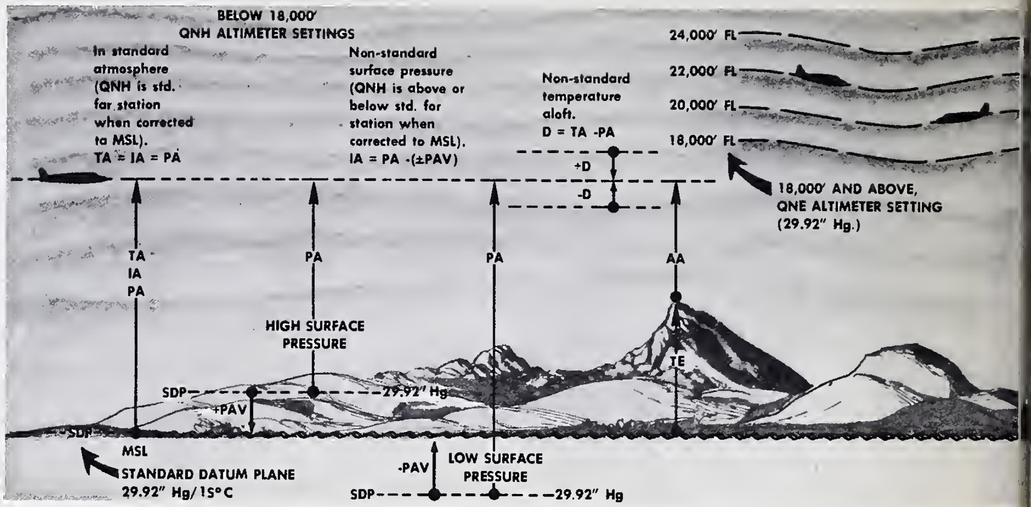

BELOW 18,000′
QNH ALTIMETER SETTINGS
In standard atmosphere (QNH is std. for station when corrected to MSL).
TA = IA = PA
Non-standard surface pressure (QNH is above or below std. for station when corrected to MSL).
IA = PA -(±PAV)
Non-standard temperature aloft.
D = TA -PA
24,000′ FL
22,000′ FL
20,000′ FL
18,000′ FL
+D
-D
18,000′ AND ABOVE, QNE ALTIMETER SETTING (29.92″ Hg.)
TA
IA
PA
PA
PA
AA
HIGH SURFACE PRESSURE
TE
SDP
+PAV
29.92″ Hg
SDP
MSL
STANDARD DATUM PLANE 29.92″ Hg/15°C
-PAV
LOW SURFACE PRESSURE
SDP
29.92″ Hg

Figure 4-14. Depiction of Altimetry Terms.

Back to "PAV&D" Again

Maj "Yuke" Smaby
330 CFIS, Castle AFB

Long, long ago in the kingdom of terrain avoidance, there existed a creature called "PAV&D." He caused much confusion among the mighty air warriors of the round table. Much enjoyment did he get from miscalculations and incorrect altitudes. Though the king of this land sent out his best tacticians and reg writers to smite the beast, he escaped and disappeared into the magical Forgotten Forest, hoping to raise his ugly head again. Well, the beast has raised his ugly head again.

And again PAV&D is causing confusion. When you investigate the manuals, regulations and publications, you will discover there are several assumptions and corrections that are used to calculate the true altitude in order to ensure safe absolute altitude. It is not the point of this article to get into an esoteric discussion of the effects of pressure and temperature changes on the density altitude or if the method we use to calculate PAV&D correctly determines how far above or below the IFR altitude we are actually flying. If you wish to investigate these questions, there are many references available for you, i.e., AFM 51-40, AFM 51-12, Vol I, and AFM 51-37. The discussion in these manuals is confusing for the average crewmember at best. To sort out the information, you will also have to refer to an expert in climatology, i.e., base weather service. What I intend to discuss in this article is the procedural application of the requirement to compute and use "altitude variation" for low level operations as published in SACR 50-4.

What does SACR 50-4 say about computing altitude variation? Basically it says that with an excessive PAV and D value "IFR altitude should not be considered a 'safe altitude.'" Minus 400 feet is considered an excessive negative PAV&D. Consequently, when a combination of PAV&D forecasted from a PMSV or observed from a flight service places the aircraft more than 400 feet below the published route altitude, we are not allowed to enter or conduct low level flight during IFR conditions or at night if you are unable to see the ground. Also, if we observe a difference greater than -400 feet between the aircraft altitude with the current FSS altimeter set and the OASHA computed true altitude or a radar altimeter crossing less than 600 feet while at IFR altitudes, we would have an excessive altitude variation which would require us to abort the low level operations during IFR conditions or at night if you are unable to see the ground. What is missing from the new SACR 50-4 is the old illustration on how to adjust the altitude variation for FSS altimeters. The old example went like this: With an altimeter setting of 30.12 and a -250 foot D-value, you will have a -450 foot altitude varia-

Altitude Variation Computation Sheet

Forecast or Reported Altimeter setting	
Subtract Standard Day Altimeter	
Total	-29.92
Multiply Total by (-1000)	
Product	x (-1000)
ADD Forecast or Reported "D" Value	
Altitude Variation	

Figure 1

tion. Again, I am not going to get into an esoteric discussion about whether this is an accurate or correct estimate of the altitude variation. What I am going to discuss is how to compute a -450 foot altitude variation and how we apply altitude variation.

SACR 50-4 does not state that we have to compute the altitude variation provided by obtaining both a D-value and altimeter from Metro; it does, though, give us an example of how to determine D-value from the Metro altimeter and Altitude Variation. Even though we don't have to check Metro's calculations, knowing the D-value can be important because it could be used with the FSS altimeter to indicate a possible altitude variation in excess of -400 feet. Granted, you are applying a forecast D-value with a current altimeter. This procedure is not all that accurate, but it is an indication of changing conditions that might place the aircraft more than 400 feet below IFR altitude. This is a very conservative approach if it is used properly. For one thing, the correction made with the FSS altimeter cannot be used to improve the altitude variation forecast by Metro. Once you get a forecast that computes an altitude variation greater than -400, you cannot enter the low level route under certain weather conditions, even though the FSS altimeter and the forecast D-value computes to less than -400 feet. However, the FSS altimeter can prevent you from entering or cause you to abort the route. For example, if the altitude variation, the way we compute it, increases more to the negative, i.e., a change from a Metro altimeter of 29.96 to an FSS altimeter of 30.06, and causes the altitude variation to exceed -400 feet, the SACR 50-4 restrictions stated above apply.

Before I proceed any further, it might be helpful to compute some altitude variations. I have provided **(see Fig. 1)** an adaptation of the chart that Metro uses to compute altitude variation for the crew during the weather briefing and update in flight. Enter the chart with an altimeter of 30.12 and a D-value of -250. If you use the chart correctly you should end up with an altitude variation of -450 as shown in **Fig. 2.** What has occurred with this computation is the addition of a possible negative altitude variation in a high pressure situation of 30.12 to increase the altitude variation caused by a cold temperature D-value of -250 **(see Fig 3).** Though you may question if this is scientifically correct, this is the method we use to compute altitude variation. The reason I went through this exercise was to show how Metro computes altitude variation and to prevent errors when correcting the altitude variation with the FSS altimeter. Twice I have seen the FSS altimeter applied directly to the altitude variation rather than the D-value. What you receive from Metro, unless you specifically ask for D-values, are altitude variations which already have a correction for the altimeter (PAV). Consequently if you enter the chart **(Fig. 1)** with the FSS altimeter and the altitude variation in the first and sixth blocks, you will have double entered the altitude correction (PAV) for the altimeter. To illustrate this, let's do some more computing. Use a Metro forecast altimeter of 30.20, and altitude variation of -150 feet, and an FSS altimeter of 30.22. If you go to **Fig. 4,** you can compute, by changing the constants and variables, the D-value which in this case is +130 feet **(see Fig. 5).** If you do what one crew did on a training sortie and use the altitude variation as the D-value with the current FSS altimeter to compute altitude variation in **Fig. 1,** you would have computed a negative altitude variation of -450 feet and could have erroneously aborted low level under certain weather conditions. Now enter **Fig. 1** with the correct D-value and you will see that that altitude variation computed with the FSS altimeter is actually -170 feet which would not require the crew to abort low level activity.

I have tried to make a chart to simplify computing the additional altitude variation caused with FSS altimeter. As you can see in **Fig. 6,** I have eliminated the need to compute the Metro D-value. This formula computes the

Altitude Variation Computation Sheet

Forecast or Reported Altimeter setting	30.12
Subtract Standard Day Altimeter	- 29.92
Total	00.20
Multiply Total by (-1000)	x (-1000)
Product	-200
ADD Forecast or Reported "D" Value	-250
Altitude Variation	-450 feet

Figure 2

Back to "PAV&D Again

change caused by the change in altimeters and applies it directly to the altitude variation. No! I did not apply the altimeter twice. I did not use 29.92 in the formula. Instead, I used the Metro altimeter. To show how this works, let's enter this chart with the above altimeters and altitude variation and see if we come out with the same results. Enter the first block with the forecast Metro altimeter of 30.20, the second block with the FSS altimeter of 30.22, and the sixth block with the Metro forecast altitude variation of -150 feet and you should come out with the same answer of -170 feet for the adjusted altitude variation that you calculated in **Fig. 1.** Obtaining the D-values from Metro and calculating the altitude variations yourself provides you the best assurance that an error has not been made in determining the altitude variation. At least one thing should be clear with all of this hocus pocus: no matter how you choose to compute your altitude variation, you should be certain what information you are getting from Metro. If it takes another radio call to determine if you received altitude variations or D- values, make it, because it is also possible to double enter an altimeter with a positive correction and make the altitude variation within limits when actually you are not.

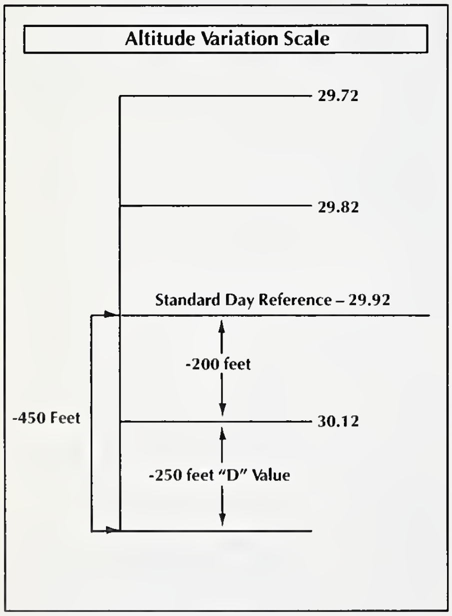


Figure 3

So far, I have dealt with forecast information that might prevent you from entering the low level route if the weather is bad enough. SACR 50-4 also directs certain actions when the crew **observes** excessive altitude variations. It is very important to crosscheck the altitude variation with our aircraft equipment while in these weather conditions. This is your current and actual altitude variation. When the forecast altitude variation exceeds -400 feet, we are allowed by SACR 50-4 to descend to 1000 feet above the IFR altitude assigned to the PEP/start VFR point in order to decide if we can maintain the weather conditions to fly low level. It does not mean, however, if the altitude variation computes to less than -400 feet, we can continue with low level operation in the weather. If aircraft equipment indicates that the aircraft is excessively below the IFR altitude while maintaining the aircraft indicated altitude at the IFR altitude with FSS altimeter set, the low level route should be aborted in certain weather conditions. This could be indicated by a radar altimeter reading of less than 600 feet. Hopefully, we would detect this error on the OASHA before this low crossing. When crosschecking the OASHA, it is important to determine the correct aircraft altitude. There can be a couple of hundred feet difference between the pilots' and navigators' altimeters. The pilot's altimeter that is in the reset mode of operation should be used as the aircraft indicated altitude. The crew should also work out a plan to update the altitude variation periodically during the low level, particularly if the computed altitude variation approaches -400 feet in the above weather conditions. The nav team is a critical part of this process. They should be vigilant during low level for areas of possible excessive altitude variation and check the OASHA against the aircraft altitude whenever possible. This direct measurement is only valid if the radar navigator (RN) keep the HA updated through quality high altitude calibrations (HAC) or low altitude calibrations (LAC). It is particularly important to calibrate HA after descent from high altitude to low level. Rapid pressure and temperature changes during the descent can cause OASHA to be in error until recalibration by HAC or LAC. The LAC function takes four samples of radar altimeter values over 250 ms and adds the average of these samples to height of terrain above

"D-Value" Computation Worksheet

Latest Metro Forecast Altimeter	
Subtract Standard Day Altimeter	-29.92
Difference	
Difference Times 1000	x 1000
Product	
Add Forecast Metro Altitude Variation	
Computed "D-Value"	

Figure 4

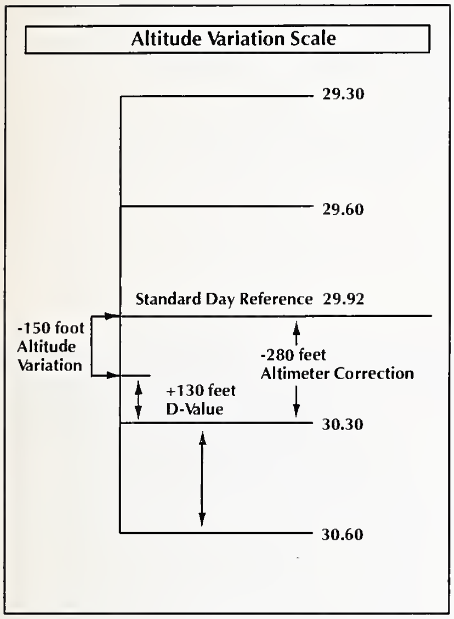

Altitude Variation Scale
29.30
29.60
Standard Day Reference 29.92
-150 foot Altitude Variation
-280 feet Altimeter Correction
+130 feet D-Value
30.30
30.60

Figure 5

MSL (HT) to compute a new value of true altitude. When over the area of selected HT, the RN should press "Update" on the "RNMP." The OAS checks the reasonableness of the new value of HA (-1200' - 34,030'), and if valid, the OASHA will be updated to the new value. The RN must take care to insure the HT is set correctly and "Update" is selected when over the area of selected HT.

Though I have made only one computational chart to use for each situation, realize that each point for the PAV&D must be checked to ensure that the entire low level is not greater than -400 feet. Secondly, you can enter the route under IFR conditions if the altitude variation does not exceed -400 feet at the entry point and continue in IFR conditions up to the area where the altitude variation exceeds -400 feet. Once you are in that area and you are still in IFR conditions or cannot see the ground at night, you must abort the route. During an abort out of low level, emergency procedures are used (you need to squawk emergency codes with the transponder) and you will not immediately have guaranteed ATC traffic separation. Therefore, you will want to use considerable crew judgment before entering a route with a mid-point or EMA altitude variation greater than -400 feet and a strong possibility of IFR conditions existing at that point. For example, if there have been aircraft aborting for "unsafe altitudes" the IR route you plan to enter shortly, it would not be a good idea to enter that route. Secondly, how much and what quality of training would you get under these circumstances? I cannot possibly cover each judgment you might have to make, but the bottom line of "fly safe" is an excellent rule to follow. It's better to make a mistake in the safe direction! A rule of thumb that will help expedite and detect situations where an excessive altitude variation exists is to look for a negative D-value and an altimeter numerical greater than 29.92. It is under these conditions that you are most likely to compute an altitude variation greater than -400 feet. If you are using **Fig. 6** to update the altitude variation with the FSS altimeters and the altitude variation is less than -400 feet, look for an FSS altimeter numerically greater than the forecast Metro altimeter. The reason these rules of thumb work is that an altimeter with a lesser numerical value than the standard day or forecast metro altimeter would have a positive effect in our method of calculating the altitude variation. This does not mean that you would never exceed -400 using the above rule of thumb, but that it would have to be an excessive situation already with the D-value or altitude variation with **Fig. 6.** Then a corollary to this rule is: the D-value or altitude variation for the FSS altimeter update technique does not already exceed -400 feet. These rules of thumb should eliminate unnecessary calculation in situations where it is obvious that the information does not compute to -400 feet. However, if there is any doubt or you are not sure about these rules of thumb, do the computations.

Note from the author:

This article has been rather long, complex, and I'm sure, controversial. It certainly has not been an exhaustive study of this subject. There is much more to be discussed and written in this area. Hopefully, it will help initiate discussions and future articles. I am a great believer in discussion and dialogue. This is the way "experts" themselves learn. I would like to end with a thanks to some of the people who were important to my discussions – those radar navigators who made me think harder, and provided me with interesting information which motivated me to do this article. Thanks to Capt Mark Crane for his excellent questions and meticulous calculations and to Capt Dan Gates who asked thought provoking questions that challenged our *"old procedures."*

Adjusted Altitude Variation for FSS Altimeters

Latest Metro Forecast Altimeter	
Subtract FSS Altimeter	
Difference	
Difference Times 1000	x 1000
Product	
Forecast Metro Altitude Variation	
Adjusted Altitude Variation	

Figure 6

More Protesters Hit the Missile Field

As the sun slowly rises out of the east, the oncoming crew of three security policemen brace for another hot August day.

Morning changeover is complete. All the equipment is checked and the night crew prepares for its 12 hours of rest. Suddenly, the irritatingly familiar sound of the support information network (SIN) line rings throughout the security control center (SCC); "OZ (outer zone alarm) break at B-04" reports the missile combat crew commander (MCCC). The capsule crew received indication of an OZ alarm at the B-04 launch facility (LF).

As the two-man Alarm Response Team (ART) quickly gathers their equipment and loads it into the truck, the flight security controller (FSC) notifies wing security control (WSC) and the squadron command post.

As the ART team journeys to the LF, they discuss what may have caused the alarm. Small animals, standing water on the site, and excessive heat are all reasons an OZ alarm can sound. Since the OZ is an electronic sensor which detects motion, any number of things can cause a false alarm. There is a possibility that some person or persons could be on the LF attempting to gain entry to damage our national resources. For this reason, every alarm is treated like the real thing.

As the ART team talks, they decide the alarm was most likely caused by excessive heat. They always see a sudden rise in the number of alarms during the summer for just this very reason.

As they top the hill overlooking the LF, the sight they behold is familiar, yet astounding – protesters. While the protesters who occasionally hold vigils at the Missouri sites are normally peaceful, the identity of this group is not yet known. They could be peaceful pacifists, or violent activists. The LFs have been visited by both sorts, from the Native Americans who claimed an LF as part of the Cherokee nation, set up residence there, and had to be removed, to the protesters who tried to make their point with a jackhammer, causing $40,000 worth of damage. Adding to the challenge, the protesters are often accompanied by newspeople and TV cameras, ensuring every move made will be recorded and analyzed by the protesters and the public on the six o'clock news. In one case, the reporter was Mike Wallace of CBS's ***60 Minutes***. As the ART team drives toward the LF, they enter an extremely volatile, yet unknown, situation requiring the utmost in prudent judgment and vigilance.

Fifteen cars line both sides of the highway in front of the LF. A group of about 20 people have gathered in a circle blocking the open cattle gates at the entrance of the short access road leading to the LF. On the fence surrounding the LF, the protesters have draped banners which denounce nuclear war and call for worldwide peace. An additional 10 people are standing in a semicircle in front of the LF gate; three protesters are on the site itself.

The ART leader immediately radios his FSC back at the launch control facility (LCF). "Bravo Control, Security One."

"Go ahead Security One."

"Roger, be advised we have arrived B-04 at this time. Initial observation is 15 cars parked on the

2Lt James W. Edwards
351 MSS, Whiteman AFB

highway in front of the LF. We've got about 20 people standing in a circle blocking the cattle gates, an additional 10 people standing in front of the LF gate, and three additional people on site."

"Roger, Security One." The FSC immediately notifies WSC and the MCC. He wakes up the night crew, which functions as a security response team (SRT), briefs them on the situation, and dispatches them to the scene. Upon making his notifications, the FSC instructs his ART, "Proceed with caution and advise the individuals they're trespassing on Federal property, that a strike upon the site is in progress, and they should depart the scene immediately. Backup is enroute."

"Roger. Request permission to enter the site."

"You do have permission to enter the site, keep a good 360° (all around security), maintain observation over individuals, and keep this office advised. **Remain vigilant!"**

> ***"As the Alarm Response Team tops the hill overlooking the LF, the sight they behold is familiar yet astounding – protestors."***

"Roger." As the ART proceeds to the cattle gate, the protesters slowly disperse to allow the truck to enter. The ART breathes a sigh of relief; it appears these are peaceful demonstrators.

It is important to remember the only crime committed thus far is simple trespass by the three individuals on the site, and the ten standing in a semi-circle out in front of the LF gate. (The property 25 feet outside the fence, commonly referred to as the clear zone, is Federal property just as is the land inside the fence.)

It is the ART's primary responsibility to protect the missile with its nuclear warhead. To accomplish this, they must secure the entire LF, to include the immediate area outside of the fence. On the other hand, the ART knows it's legal for these individuals to protest and they must be careful not to abridge the right of these individuals to assemble and protest peacefully; nuclear protesters also enjoy First Amendment rights. As the ART member exits the truck, he is careful of the placement of his weapon. It must be religiously kept at sling or port arms to preclude injury to himself or anyone else in the unlikely event of an accidental discharge, and yet in a position where it can be rapidly brought to bear if a need arises. The weapons are loaded at all times with a 30-round magazine, and while it is SP policy that weapons are kept on safe with no round in the chamber, accidents can happen. Don't get the wrong idea, however. Deadly force is authorized to protect our resources, and given the proper cause, SPs will not hesitate to use their weapons.

Weapons are extremely dangerous in a scenario such as this. Although the protesters are peaceful and mean no harm, the sight of a weapon can excite them, and become a rallying point for more aggressive protests.

"I am Airman Jones of the United States Air Force Security Police. I must advise you that a strike is in progress and you are to depart the site and the 25-foot clear zone immediately."

Although the individuals outside are trespassing, the ART doesn't attempt to apprehend them for two reasons. First, the 25-foot clear zone is not clearly marked. Second, the demonstrators have heeded his warning and are moving away.

Once the individuals leave the clear zone, the ART team sees one individual sitting on the ground directly in front of the LF gate. He has a Bible in his hands and he is chained to the gate. The ART member again advises him to leave the area.

"Brother, I mean no harm to you. I understand you are simply trying to do your job, but I am sorry, I am not leaving," replies the protester in a calm voice.

The ART leader radios back to the FSC. "Be advised, individuals in 25-foot clear zone have departed. We've got one individual, male, about 35 years of age, holding a Bible, sitting chained to the LF gate. Individual refuses to move. Also, three individuals on the site are sitting on the launcher lid door, refusing to leave."

"Roger, Security One. Understand you have one individual chained to gate and three on site. Where are the rest of them?"

"They've gathered about ten feet behind the ART vehicle in a circle. They're singing religious songs."

"Roger. Keep the individuals under strict observation. Also, cut the chain off of the individual, handcuff, and carry him outside the 25-foot clear zone. Challenge the three individuals on site, get them off of the LF, attempt to identify, and await civilian law enforcement; they are enroute." "Roger. Initiating same at this time. Also, do you have an ETA on civilian law enforcement and the SRT?"

"That's affirm, Security One. SRT will be there in approximately 10 minutes and civilian law enforcement in 15. Also, remember that once you take custody of individuals, you are responsible for their safety, so keep them out of the way of traffic and any other hazards in the area."

"Roger."

As the ART team uses bolt cutters to sever the chain that links the individual to the fence, and handcuffs him, he is extremely friendly. While cooperative, he forces the ART team to lift him and carry him out of the 25-foot clear zone. He is practicing civil disobedience.

Once he is taken care of, they then attempt to get the three individuals off site. They too refuse to leave of their own accord. Just as they are about to handcuff the first individual on site, the SRT team arrives.

To insure they maintain control of the situation and the suspects, the ART delays handcuffing until the SRT team is in position to keep all protesters under vigilant observation. Then the ART proceeds to clear the three remaining individuals off the site.

As the last individual is being carried off site, an officer from the Missouri Highway Patrol arrives on the scene. Because of the Posse Comitatus Act, which prohibits military forces from enforcing civilian laws, the security police relinquish custody of the individuals to local civilian authorities. They will be held until they make bail and later tried in Federal court for trespassing.

"Brother, I mean no harm to you. I understand you are simply trying to do your job, but I am sorry, I am not leaving," replies the protester in a calm voice.

The Missouri state trooper also expedites the clearing of the remaining protesters out of the area. While the volatile situation is over, the job of the missile cops is not. They begin a time-consuming search of the LF. They check for any explosives the individuals may have left on site, any damage they may have done, and gather any evidence they may have left, such as the banners hanging on the fence.

During their search, they discover a few flowers placed on the launcher lid door. Painstakingly, so as not to cause damage, the ART collects them; even these are evidence. Once the site is swept for any explosives, inspected for damage, and all evidence is collected, the ART and SRT are released from the site by the FSC and head back to the LCF.

When they arrive back at the LCF, the paperwork begins. The FSC collects all the notes from the ART and SRT to complete his blotter. The ART and SRT also refer to these notes to write their statements. Accuracy in both the statements and the blotter is paramount, for they will surely be entered as evidence during the trial. In addition, the security cops will have to testify at the trial, most likely on their off duty time.

The duty of the United States Air Force security police to ensure the safety of our national resource was upheld in this instance. While three protesters did gain entry to the site, they did so by climbing the chain link fence. The fence is only a legal boundary designed to deter entry into the site. The missile itself, however, is protected by several physical barriers that worked just as designed in the above instance; the missile and its warhead were safe at all times.

While the missile cops have checklists, as most other career fields have, there is no checklist to instruct a responding airman, who may be only 18 or 19 years old, on how to handle a situation where he is outnumbered 15 to 1. The only resources he has at his disposal are his training, experience, and common sense; he reacts to events as they occur to prevent harm to himself, others, and the resource.

Safety is one of the paramount concerns of the security police; it is their mission and is required if they are to do their job effectively. First, safety of our national resources is the reason they exist. If the resources are not protected in peacetime, they will not be available for use in wartime. Second, to do their job effectively, missile cops have to think and live safely. This enters into play with their handling of weapons; they are an integral tool. The handling of suspects is another area. If a suspect in the custody of the Air Force is injured, the very real possibility of a lawsuit exists, not to mention the detrimental effect in public confidence an injury of this type would have. While all of these are important, their biggest hazard, and where safety comes into play the most, is driving.

Every day, the ART teams drive thousands of miles to flight LFs responding to alarms. These individuals often drive in the poorest of conditions. The LFs are located in rural areas; for most, the only avenues of approach are long, twisting, narrow, poorly maintained roads. These responses are done in all types of weather – from dense fog to driving rains to blinding blizzards.

In addition to poor road and weather conditions, the teams must contend with animals and slow moving farm equipment that always seem to appear as one rounds a sharp, blind corner or tops a steep hill. Yet, while they contend with these conditions 24 hours a day, 365 days a year, the unit logged over 725,000 miles last year with only nine vehicle accidents and no injuries.

Their duty day is long and full of hazards, from dangerous driving conditions to unpredictable events. Their actions often go unnoticed or are criticized. But to the professional men and women of the security squadron, it is but a day's work in support of the mission.

In Memoriam

General Joseph J. Nazzaro
CINCSAC 1967 – 1968

General Joseph J. Nazzaro, CINCSAC from February 1, 1967 – July 31, 1968, died February 5, 1990, at the age of 76.

General Nazzaro's first assignment in SAC was in May 1946 – two months after the command was established – as chief, operations division. In all, General Nazzaro had over 13 years experience in SAC.

General Nazzaro's military career began in 1932 at the U. S. Military Academy. During WWII, General Nazzaro commanded both the 381st Bombardment Group as well as the 316th Bombardment Wing.

Within SAC, General Nazzaro served as commander of the 68th BMW as well as the 38th and 5th Air Divisions. A former deputy commander of 15th Air Force, General Nazzaro took command of the Eighth Air Force in 1962. On December 1, 1964, he became vice commander in chief of SAC.

General Nazzaro became commander in chief of SAC and was promoted to four-star rank 1 February 1967.

General Nazzaro's tenure at SAC coincided with an increased role for the command in conventional bombing in Southeast Asia. During 1967, B-52s flew approximately 9,700 effective bombing sorties, almost twice the number flown in 1966. In early 1968, SAC bombers conducted round-the-clock strikes against enemy forces besieging Khe Sanh. Approximately 60,000 tons of bombs were dropped around the surrounded base, destroying tons of North Vietnamese supplies concentrated in the area. These air attacks helped break the siege on Khe Sanh and force the North Vietnamese to withdraw.

While the war in Southeast Asia was demanding more and more B-52 and KC-135 support, General Nazzaro ensured the primary mission of SAC remained one of deterring a nuclear attack upon the United States.

As General Nazzaro stated at the time, "SAC's participation in Southeast Asia provides ample evidence of the command's versatility and flexibility and has focused deserving attention on certain of our units. However, we must never overlook the less glamorous but terribly vital job being done by our alert and missile crews and the dedicated men and women who support them...As long as we continue to have men and women dedicated to giving their all, SAC will continue to provide the responses required by national policy."

Combat Crew remembers and salutes General Joseph J. Nazzaro, an honored SAC Warrior! ★★★★

SAC FLYING MILESTONES

To gain listing, crew members will be selected by their unit commander, have flying hours in SAC aircraft verified by unit flight records, and have no involvement as a causal factor in a Class A, B, or C flight mishap. Names are sent to NAF/DOT and forwarded quarterly to HQ SAC/DOSF.

5 BMW

1000 Hours
Capt Paul C.Mathis
Capt David H.Pflieger, Jr

2000 Hours
Capt Steven D.Sawyer

3000 Hours
SSgt Leonard J.Bonamo
SSgt Thomas M.Seabolt, Jr

6 SRW

1000 Hours
Capt Howard L.Orban
Capt Dale R.Ekmark
Capt Michael J.Willson

2000 Hours
Capt Stephen G.Wilder

3000 Hours
Capt Paul R.Yakes

4000 Hours
Capt Mayo J.Elliott, Jr

55 SRW

1000 Hours
Capt Rhonda J.Braudis
Capt Patrick M.King
Capt Bernard J.Mallow
Capt Chris Reeter
Capt Michael O.Kerr
Capt Gary K.Leff
Capt Karen S.Pullen
Capt David P.Woods
1Lt Scott A.Cilley
1Lt Albert C.Gloria, III
1Lt Kevin L.Todd
1Lt Karen S.Clark
1Lt Joseph M.Harvey
TSgt Walter M.Bullock
TSgt Robert M.Bradley
TSgt Tim R.Ruiz
TSgt Ronald G.Foster
TSgt William M.Young
SSgt Robert D.Duncomb, Jr
SSgt Jesse A.Eissens
Sgt James E.Spencer, Jr
Sgt Deborah C.Worth

2000 Hours
Lt Col Michael L.Zens
Capt Christopher L.Canada
Capt Lyle K.Decker
Capt William S.Hackney
Capt Richard J.King
Capt David M.Sofet
Capt Christopher C.Widseth
Capt Jimmie D.Bailey, II
Capt Mark E.Carter
Capt Dennis P.Gillion
Capt William R.Kent, III
Capt George M.Smith
Capt Andrew C.Tremblay
Capt Brian P.Zurovetz
TSgt Thomas S.Ellens
SSGt William D.Dion, III
SSgt Robin A.Guerrant
SSgt Brian J.Mapes
Sgt Melvin C.Lewis

3000 Hours
Maj James W.Bizzell
Maj Herman D.Ross
Maj Marc A.Soutiere
Maj Ralph L.Swann
Capt William A.Ady
Capt Scott I.Benge
Capt Tony G.Cox
Capt Scott B.Gower
Capt Andrew A.Kohlan
MSgt Randolph P.Shaul
MSgt Steven S.Wiseman
TSgt John G.Basso
TSgt Anthony P.Demeo
TSgt Steven D.Tomasso
TSgt Robert K.Turnbull
SSgt Robert T.Titus

4000 Hours
Col Danny F.Rich
Lt Col Rolland E.Robison
Maj Mark A.Lewis
Maj James D.Parsons
TSgt Ann F.Billau

5000 Hours
Lt Col David M.Hollingsworth
Maj Eugene F.Barton

6000 Hours
Lt Col John K.Lehman
Maj Michael P.Whalen

7000 Hours
Maj John T.Tresemer

92 BMW

1000 Hours
Capt James A.Bonnier
Capt Matthew Bundy
Capt Gordon D.Fagras
Capt Michael R.Novitske
Capt Bruce C.Rowe
Capt Tracy H.Schooley
Capt Brian A.Wentz
TSgt Terence M.Prausa
SSgt Devin D.Beighler
Sgt Dean M.Pickering
Sgt Ursula H.Ward

93 BMW

1000 Hours
Capt Randall L.Cole
Capt Frank M.Kojder
Capt Lowell J.Stockman

MILESTONES

2000 Hours
Lt Col Stan G.Weir
Maj Raymond G.Donley
Maj Thomas J.Marsden
Capt Richard D.Baldwin
Capt Gregory A.Biscone
Capt Gary A.Brand
Capt Michael J.Brooks
Capt Mark A.Volk
Capt Richard D.Carroll
Capt Mark R.Cobin
Capt William T.Cox
Capt James G.Cramp
Capt Paul F.Deckers
Capt Toby N.Dehnert
Capt Kenneth R.Dorner
Capt Jeffrey T.Fraher
Capt James J.Greenough, Jr
Capt Brian D.Keppel
Capt Lance King
Capt Kermit D.Neal
Capt Jimmy D.Smithers
Capt Michael L.Steirs
Capt Gail E.Wojtowicz
Capt Jonnie Mize
Capt James P.Johnson
Capt Leonard T.Beck
Capt Kerry G.Gulzow

3000 Hours
Col John R.Clapper
Lt Col Billy K.Osborn
Lt Col David E.Day
Lt Col Weldon P.Horton
Lt Col Kyle W.Rensler
Lt Col Stephen G.Boozer
Maj Jeffery L.Sonntag
Maj Raymond Moeller
Maj Ezequeil Parrilla, Jr
Maj Lansing E.Dickinson
Maj William A.Nelson
Maj Mark C.Stormont
Maj Gary P.Tyler
Maj David D.Vangsness
Capt Charles K.Baker
SMSgt Thomas E.Bettini
MSgt Keith A.Janssen
TSgt Ropbert L.Skelton
TSgt Temur Ablay
SSgt Matthew O.Roukas

4000 Hours
Maj Vincent P.Befi
Maj Bruce E.Munk
Maj Keith A.Torgerson

96 BMW

1000 hours
Capt David G.Stewart
Capt Luke C.Hagler
Capt James J.Newell, III
SSgt Stephen A.Zoller

2000 Hours
Maj Robert M.Homola
Capt Clinton E.Taylor
Capt Keith W.Phillips

168 AREFS

1000 Hours
SSgt Bridget E.Tamburino

2000 Hours
Maj Arne E.Moe
Capt Thomas C.Hutchings
Capt Timothy W.Scott
TSgt Richard D.Hardy

340 AREFW

1000 Hours
Maj Ramon D.Mata
Maj David G.Adams
Maj James N.Tucker
Capt Clifford R.Lovin
Capt Edward J.Trujillo
Capt Eric A.Worley
Capt Curtis E.Henry
Capt Dennis Tajer
Capt William D.Taylor
Capt Stephen Ameling
Capt Walter H.Chase
Capt Joseph N.Harlan
Capt Steve R.Westerback
Capt Noel Bourgeois
Capt Julia M.Latham
Capt Michael J.Mixon
Capt Roger R.Perret
Capt James D.Tucker
Capt Peter C.Wyatt
Capt Jeffery J.Bassaline
Capt Daniel R.Bridges
Capt Walter M.Denton
Capt Terry W.Friend
Capt Eric B.Johnson
Capt Kenneth D.Lewis
Capt Scot C.Purnell
Capt Stephen W.Ragland
Capt David A.Sprague
Capt Michael B.Cahill
Capt Donald J.Colbacchini
Capt Richard J.Hughes
Capt Beau L.Johnson
Capt Dean B.Marvin
Capt Richard S.Norris
Capt Brett T.Peele
Capt Stephen C.Zink
SSgt David J.Passey
SSgt Louis P.Rushano
Sgt Eddie F.Dean
Sgt Stephen R.Meloy
Sgt Mark W.Miller

2000 Hours
Lt Col Roger G.Raper
Lt Col Richard P.Muse
Maj Neal A.Lundby
Maj Bernard V.Traynor
Maj Anthony T.Lambert
Maj Randall A.Briggs
Maj Kent D.E.Hunter
Maj Stephen E.Myers
Maj Craig D.Christman
Capt Mavis E.Compagagno
Capt Craig E.Nordmark
Capt Linda K.McCullers
Capt Harry E.Lunden
Capt Eric H.Capped
SMSgt Lawrence W.Thompson
SMSgt Daniel D.Deloy
MSgt Frederick Thomas
SSgt Daniel J.Repp
SSgt Ebic Merriweather
SSgt Jerrery A.Wright

4000 Hours
Col Gene E.Englund
Lt Col James M.Smith
Lt Col Marcus D.Blacketer
Lt Col Richard L.Knapp, Jr
Maj Michael H.McQuinn
MSgt Richard L.Hackett

376 SW

1000 Hours
Capt Michael L.Gross
Capt Jeffrey N.Stout
SSgt Stephen D.Smith
Sgt Gary L.Elliott

2000 Hours
Capt Steven J.Apple

PROFESSIONAL PERFORMERS

1Lt Kara L. Bloomer and 2Lt Susan L. Turley

Missile Crew

The 351 SMW Crew S-160, consisting of 1Lt Kara L. Bloomer and 2Lt Susan L. Turley, is SAC's Crew of the Month.

The crew assumed the alert at Oscar-01, the squadron command post (SCP), during the middle of an operational readiness inspection (ORI) for the SAC Inspector Genral (IG). Soon afterward, wing leadership, who had dispersed for the ORI, called on the SCP to act as a relay node for the exercise. This required one crew member to maintain a constant communications link with the wing staff, leaving the other crew member to coordinate the squadron response to the ORI and ensure all appropriate actions were taken. Later in the alert, Lts Bloomer and Turley began what they expected to be a routine Rivet Mile deposture at Oscar-06. After processing several teams on site, the crew prepared for the remote launch facility (LF) overwrite. All went well until the mechanical maintenance team (MMT) took the sortie standby no-go. Less than a minute after standby no-go indications, the crew received an uncoordinated warhead alarm. Referencing the LF Activities contingency procedure, Crew S-160 requested an authentication from the team chief in charge of the site. He misauthenticated, so the crew directed the assistant team chief to authenticate. After receiving a correct authentication from the assistant team chief and ensuring site security was unquestioned, Lts Bloomer and Turley attempted to discover the cause of the alarm and the appropriate corrective actions. Working with wing job control (WJC) and MMT, they determined another maintenance team on site had caused the alarm by disconnecting cables without first coordinating with MMT and the crew. Because warhead alarm is an LF no-go condition, the crew could not perform the remote LF overwrite, and all WJC-directed attempts to return the sortie to a standby no-go condition failed. To avoid leaving the missile guidance set (MGS) coded, the crew coordinated with WJC and the missile control division to ensure prompt dispatch of an LF overwrite cartridge for a local MGS overwrite. Their swift, heads-up thinking guaranteed the safety of the weapon system. Lts Bloomer and Turley also simultaneously ran the emergency power and air procedure for the IG-directred diesel run, initiated the Olympic Play exercise for the IG, and coordinated IG communications testing.

ICBM Maintenance

SrA William G. Thomas, Jr., Pneudraulics Shop Team Chief, 351st Field Missile Maintenance Squadron, Whiteman AFB, Missouri, is SAC's ICBM Maintenance Technician of the Month.

Amn Thomas flawlessly maintains his section's parts kits and bench stock items. Using his vast experience and exceptional organizational skills, Amn Thomas has drastically reduced unnecessary parts runs to the field and in-shop equipment downtime. Amn Thomas submitted two AFTO Forms 22 on technical data deficiencies concerning launch control cneter blast door inspection requirements. These new procedures prevented technicians from overlooking critical inspection steps. Amn Thomas also identified and corrected a serious problem with launch facility lifeline attachment points.

Aircraft Maintenance

MSgt Steven D. Schwing, 28 BMW, Ellsworth AFB, is SAC's Maintenance Man of the Month. Assigned as a B-1B crew chief, MSgt Schwing was handpicked to participate in Giant Warrior 89-3, the first major Pacific deployment for the B-1B. While there, an urgent action time compliance technical order was received that required the removal of the wing sweep gear box, grounding the B-1B fleet. Reacting extremely well under pressure, MSgt Schwing supervised the day shift operation that rapidly completed the work required. His leadership ensured the first B-1B launch in SAC within 24 hours after the grounding notification.

MSgt Schwing's maintenance capabilities and system knowledge have been used for many recovery missions to retrieve B-1B aircraft that have been forced by malfunction to land away from home station. Aircraft 86-0109, for example, was afflicted with an engine shutdown problem, forcing it to land at Tyndall AFB, Florida. He was the perfect person for the job. He repaired the aircraft and launched it within four hours after he arrived at Tyndall.

A B-1B aircraft's flaps/slats failed to operate while TDY to Peterson Field, Colorado. Normally a job for specialists, MSgt Schwing repaired the disabled aircraft and successfully launched it on time to complete its mission. His ability to restore the aircraft to mission capable status without bringing in specialists TDY from Ellsworth ensured minimum expense and delay.

Munitions Airman

Staff Sergeant Gregory P. Akin, 96 BMW, Dyess AFB, is SAC's Munitions Airman of the Month. SSgt Akin's outstanding performance as a weapons release team chief is a direct reflection of his professional management and dynamic leadership abilities. Through close coordination with Boeing and Rockwell technical order writers, the procedure for the SRAM System Interface Test (SIT) was completely rewritten. The new SIT procedures, which are used by all B-1B weapons release personnel are now easier to comprehend,and in turn, allow personnel to be trained faster.

During a recent SAC IG visit, SSgt Akin performed an error-free SIT on the alert aircraft. His mastery of the B-1B weapons system, his technical knowledge, and nuclear surety procedures earned him mention in the IG outbrief report as an "Outstanding" performer.

SSgt Akin's ability to recognize a developing problem and take immediate corrective action is the key to his success. He identified several discrepancies with technical data used by the 49th Test and Evaluation Squadron to perform SRAM operational test launch open loop tests. His corrections to these procedures culminated in the highly successful first launch of a SRAM from the aft weapons bay of a operational B-1B.

MSgt Steven D. Schwing

SrA William G. Thomas, Jr.

SSgt Gregory P. Akin

SAC SAFETY SCREEN

The SAC Safety Screen is an honor roll of SAC's most professional crews. To gain listing on the Screen, crew members must be nominated by their unit commanders and meet high selection criteria of experience in their aircraft or missile system IWA AFR 1272/SS1.

644 BMS, K I Sawyer Crew E-24: AC Capt Robert E Wheeler, P 1Lt Mark S Ewart, RN Capt John J Hatch, N 1Lt David G Salomon, EW 1Lt Ronald C Huggins, Jr.IG SSgt Michael L Simmons

644 BMS, K I Sawyer Crew E-26: AC Capt Gale L Brattrud, P Capt Dale N Deboer, P 1Lt William H Webber, IRN Capt Paul L Yarian, N 1Lt Orin W Sadler, EW Capt Larry Gladback, IG SSgt Lawrence R Delgado

509 AREFS, Pease Crew R-121: MP Capt Jeffrey A Ferrante, MC Capt James P Brown, IN Capt Brian T Kelley, MB A1C Christopher L Parrish

393 BMS, Pease Crew E-11: AC Capt Michael R Sherman, IR Capt Jeffrey G Harrington

393 BMS, Pease Crew E-17: IP Capt Robert J Ott, IR Capt John N Atkins, Jr

715 BMS, Pease crew S-04: IP Capt George Kramlinger, IRN Capt Terry Sykes

715 BMS, Pease Crew R-20: IP Capt Scott Chesnut, RN Capt Barry Walters

715 BMS, Pease Crew E-14: IP Capt Chris Siebach, IRN Capt Jim Davis

715 BMS, Pease Crew R-18: P Capt Bob Naylor, RN Capt Steve Luxion

510 SMS, Whiteman Crew S-160: MCCC 1lt Kara L Bloomer, DMCCC 2Lt Susan L Turley

351 SMW, Whiteman Crew E-092: MCCC Capt Edmund R Papczun, DMCCC 2Lt Byron D Spencer

351 SMW, Whiteman Crew R-011: MCCC 1Lt Edguardo Santigo, DMCCC 2Lt Joseph Cruz

321 SMW, Grand Forks Crew R-011: MCCC 1Lt Paul R Warren, DMCCC 2Lt Hans R Augustus

337 BMS, Dyess Crew R-10: AC Capt James T Manning, P Capt John J Pavik, OSO Capt Mark A Rowe, DSO Capt Timothy A Avey

337 BMS, Dyess Crew R-20: AC Capt Kirk L Cakerice, P Capt Mark S Novak, OSO Capt Timothy N Travis, DSO Capt Thomas R Harrington

338 CCTS, Dyess Crew Z-62: IP Maj James Arter, IP Maj Richard Smith, IOSO Maj Antonio Mendibur, IDSO Maj Warren Anderson

338 CCTS, Dyess Crew Z-70: IP Capt Joseph Brown, IP Capt Peter Melim, IOSO Maj Herbert McClain, IDSO Capt Robert Homola

917 AREFS, Dyess Crew R-123: AC Lt Col Gary Kaufman, P lLt Ron Langford, N Capt Mike Petrosh, BO AlC Rome Nunoz

917 AREFS, Dyess Crew R-111: AC Capt Luke Hagler, P 1Lt John Muchenhirn, N 1Lt Mike McCullough, BO SrA Randy Zaiontz

91 AREFS, Malmstrom Crew R-115: AC Capt Benjamin T Reeves, P 1Lt Bradford C Davis, N 1Lt James M Donnell, BO Sgt Dale A McCutcheon

91 AREFS, Malmstrom Crew R-130: AC Capt Scotty L Selman, P lLt Ronald R Keto, N Lt Col Gary D Ogburn, BO TSgt John M Lobenberg

384 AREFS, McConnell Crew R-119: AC Capt Rodney Parkinson, P lLt Rip Lee, N lLt Tim Thomas, BO Sgt Tim Treinen

384 AREFS, McConnell Crew R-111: IP Maj Richard Hix, P lLt Darren Childers, N lLt Bill Dorsey, BO Amn Russell Gordon

28 BMS, McConnell Crew E-41: AC Capt Bill Hemb, P Capt Mike Tellier, IOSO Maj Monty Vallentine, IDSO Capt Chet Wilson

28 BMS, McConnell Crew E-61: AC Maj Dan Mumaugh, P Capt Frank Rose, OSO Capt Al Miller, DSO Capt Jeff Lobermeier

328 BMS, Castle Crew: IP Maj Jack J.Schneider, IRN Capt Andre Provoncha, IEWO Capt John H.Reed, IG SSgt Gary G Freeman

38 SRS, Offutt Crew R-21: AC Capt William D Jenne, P lLt William A Dodd, N-1Maj Michael P Jones, N-2lLt Wesley E Smith

99 AREFS, Robins Crew R-l83: AC Maj David J Lawton, P Capt Diann M Wright, N Capt Daniel E Hogan, BO Amn Shane A Sanders

912 AREFS, Robins Crew R-134: AC Capt Kevin L Rima, P lLt Daniel K Kassel, N lLt Stanley E Cornelius, BO Sgt Richard Y Dodd

28 AREFS, Ellsworth Crew E-l20: IP Lt Col Gene Loofbourrow, P Capt Rich Frankel, N lLt Ken Murray, IBO TSgt Dan Gilson

37 BMS, Ellsworth Crew R-l3: AC Capt Charles A Petty, P Capt Scott A Jordan, OSO Capt Thomas A Powell, DSO Capt Richard E Prater

77 BMS, Ellsworth Crew: AC Capt David W Bronson, P Capt James A Schwindt, OSO Capt Michael B Stock, DSO Capt Daniel J Novick

344 AREFS, Seymour Johnson Crew R-l20: AC Capt Frederick M Mosher, P Capt David O Watts Jr, FE SSgt Robert O Kimery, BO Sgt Jack M Norris

344 AREFS, Seymour Johnson Crew R-l32: AC Capt Alfred W Honrath, P Capt Carol A Pugh, FE TSgt Joseph Miranda, BO SSgt Melanie B Potter

97 AREFS, Eaker Crew S-152: IAC Capt David Cantor, P lLt Michael Stahr, IN Capt Steven Tucker, IBO Sgt Joseph Riener

97 AREFS, Eaker Crew R-713: AC Capt Greg Davis, P lLt Jeanne Trigo, N lLt Kevin Smith, BO Sgt Shaun Lewis

340 BMS, Eaker Crew S-001: IAC Maj Rick Mowrer, P Capt Tim Gause, IRN Capt Bruce Carrico, IN lLt Jim Gills, IEWO Maj David Landry, IG TSgt Sam Brucks

340 BMS, Eaker Crew S-03: IAC Capt Jonathan Arnett, P Capt Kevin Kent, IRN Capt Fred Vanwicklin, IN lLt Kelan Skarbek, IEWO Capt Bryan Adams, IG SrA Charles Mize

524 BMS, Wurtsmith Crew R-11: Capt Mark S Lilley, lLt Thomas M Wells, Capt Scott R Salmons, lLt Charles W Patnaude, lLt Stephen E Moczary, AlC James R Carpenter.

524 BMS, Wurtsmith Crew R-21: Capt Barry Sebring, lLt John L Mitchell, Capt Stacy C Callaghan, lLt Daniel R Schumann, lLt Mark Sheehan, AlC Brian K Moore.

920 AREFS, Wurtsmith Crew S-l30: IP Lt Col Lew Hatch, MC lLt Thom Sharpy, MC lLt Allen McPherson, IN Capt Chad Spitznagel, IB SSgt John Felisky

920 AREFS, Wurtsmith Crew R-l40: MP Capt Jerry Katz, MC lLt Mike Araujo, MN Capt John Foytlin, IB TSgt Jon Bibler

920 AREFS, Wurtsmith Crew R-153: MP Capt Dan Holmes, MC lLt Rick Mercado, IN Capt Luis Muniz, MB Sgt Joe Yost

310 AREFS, Plattsburgh Crew R-l63: AC Capt Michael E Clark, P lLt Wolfgang Miggiani, N Capt James A Stewart, BO SrA James D Francey

380 AREFS, Plattsburgh Crew R-132: AC Capt Kenneth L Mautino, P lLt Samuel R Veney, N Capt Curtis R Heath, BO AlC Brian E Hughes

528 BMS, Plattsburgh Crew E-10: P Capt Daniel P Woodward, RN lLt Christopher M T Tuason

528 BMS, Plattsburgh Crew R-3l: P Capt Stephen W Skinner, RN Capt Mark R McCausland

528 BMS, Plattsburgh Crew R-32: P Capt Paul W Nelson, RN Capt John B Martins

529 BMS, Plattsburgh Crew R-62: P Capt Rex F Bailey, RN Capt Norman D Lloyd

529 BMS, Plattsburgh Crew R-70: P Capt Michael K Frye, RN Capt Jeffrey J Bonavita

529 BMS, Plattsburgh Crew R-72: P Capt James F Myers, RN lLt Randy S Brawley

46 BMS, Grand Forks Crew R14: AC Capt Lawrence H Haskell, P Capt David M Wallette, IP Capt Mark K Simmons, IOSO Capt James R Young, OSO Maj Glenn A Pallazza

905 AREFS, Grand Forks Crew R-l24: AC Capt Daniel M Malone Jr, P lLt Rockford B Wright, N Capt David W Herder, BO AlC Paul E Wallace

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